

No. 3617

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IN THE
United States Circuit Court of Appeals
FOR THE NINTH CIRCUIT.

MAJESTIC ELECTRIC DEVELOPMENT COMPANY,
Plaintiff and Appellant,

vs.

WESTINGHOUSE ELECTRIC & MANUFACTURING
COMPANY,
Defendant and Appellee.

OPENING BRIEF OF APPELLANT

JOHN H. MILLER,
Attorney for Appellant.

Filed this.....day of....., A. D. 1921.

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By....., Deputy Clerk.

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OPENING BRIEF OF APPELLANT

STATEMENT OF FACTS

This is an appeal from a final decree made and entered on November 1, 1920, by the District Court of the United States for the Northern District of California, dismissing the plaintiff's bill of complaint (Rec., 33-4). The suit was brought by the appellant, Majestic Electric Development Company, hereinafter called the plaintiff, against the Westinghouse Electric & Manufacturing Company, hereinafter called the defendant, for infringement of letters patent, No.

1,245,084, of October 30, 1917, issued to Edmund N. Brown, assignor to Majestic Electric Development Company, for an electric heater.

The case was tried by the Honorable Frank S. Dietrich, Judge of the United States District Court for Idaho, sitting in the place and stead of Judge Van Fleet, by virtue of a designation signed by the Senior Circuit Judge authorizing Judge Dietrich to hold Court in the Northern District of California for the months of August and September, 1920 (Rec., 16). The trial terminated on September 1, 1920, and thereafter Judge Dietrich returned to Idaho without having rendered a decision. Afterwards he wrote an opinion, which was sent to San Francisco and filed on October 4, 1920 (Rec., 33). On the same day the District Court for the Northern District of California, Hon. Maurice T. Dooling presiding, entered an order in the minutes of the Court to the effect that a decree be signed, filed, and entered in accordance with Judge Dietrich's opinion (Rec., 17). Afterwards, on November 1, 1920, the District Court for the Northern District of California, by Hon. Robert S. Bean, District Judge of Oregon presiding, made and entered the decree complained of, in and by which it was ordered that the bill of complaint be dismissed (Rec., 33-4). Plaintiff appeals from that decree.

The bill of complaint is in the usual form. The answer puts in issue all the allegations of the bill and pleads invalidity of the patent in suit by reason

of prior patents and printed publications, the prior art, prior use by certain named persons, and also the additional statement that Alfred H. Huntington of Riverside, California, was the original and first inventor of the device in question, and that Edmund N. Brown surreptitiously and unjustly obtained the patent while Huntington was using reasonable diligence in adapting and perfecting the same.

No evidence was produced by defendant in support of this last-named defense, and hence it may be dismissed from consideration. As to the other defenses, defendant introduced certain prior patents and publications, the same being referred to and identified in the statement of the evidence under equity rule 75, which was prepared and filed in the case and appears between pages 36 and 156 of the record.

The assignment of errors appears between pages 160 and 165 of the record. They are 34 in number.

THE QUESTION FOR DECISION INVOLVED ON THIS APPEAL

The lower Court did not hold that the patent was invalid, but merely that it was not infringed. We take this as a holding, at least inferentially, that the patent is valid, and hence the sole question for determination by this court is that of infringement.

This involves the proper construction to be given to the plaintiff's claim. The lower court held that the invention was not of a "generic" character introducing a "broad fundamental idea theretofore unknown in the art," but that it covered only "minor

improvements in a known mechanism," and, as defendant's mechanism differed in form from that of the plaintiff, there was no infringement (Rec., 22).

This does not correctly state our position. Our position is two-fold, viz.:

1. While the invention is not of such character as is generally termed primary or generic, introducing into the art a wholly new principle not before known, nevertheless it is such a radical departure from pre-existent things and such an advance over the prior art as to be entitled to a broad and liberal interpretation. In fine, it is in that class of inventions styled primary improvements.

2. But even if the invention is not of the breadth above indicated, and is limited to details of construction, nevertheless it is entitled to the doctrine of equivalents, and by virtue thereof defendant's structure must be held to be an infringement.

Later we shall endeavor to show wherein the lower court erred in its construction of the patent. At the present time we are merely stating our position so that your Honors can have it in mind as the argument progresses.

THE PATENT IN SUIT

This patent is No. 1,245,084, dated October 30, 1917, issued to Edmund N. Brown, assignor to Majestic Electric Development Company. The invention is entitled "An Electric Heater." On the opposite page will be found a reproduction of the drawings of the patent.

E. N. BROWN.
ELECTRIC HEATER.
APPLICATION FILED JULY 10, 1917.

1,245,084.

Patented Oct. 30, 1917.

Fig. 1.

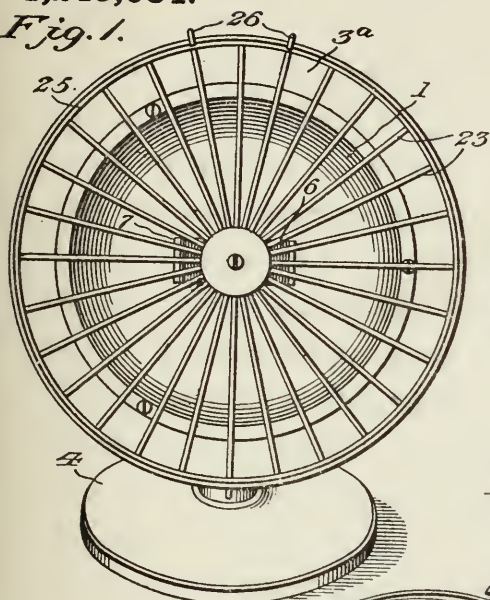


Fig. 3.

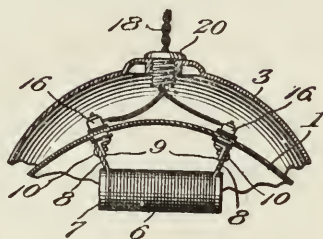


Fig. 6.

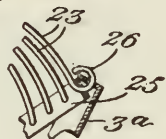


Fig. 2.

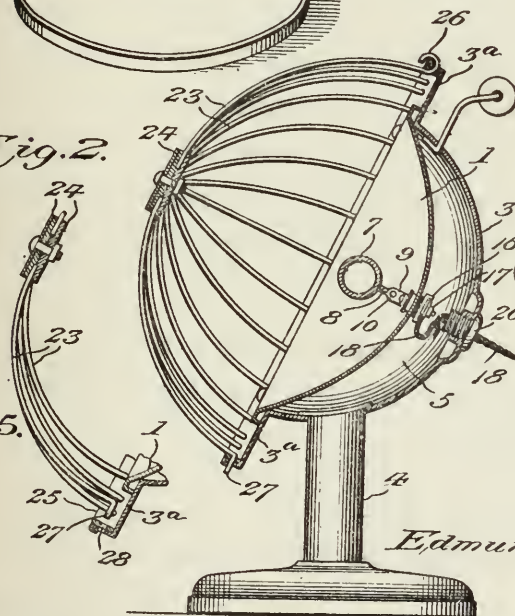


Fig. 4.

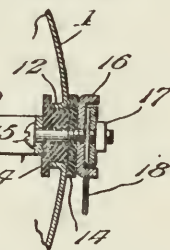
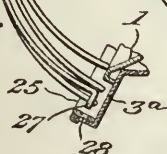


Fig. 5.



Edmund N. Brown
Inventor

Witness

Philip E. Barus

By

Eugene C. Brown
Attorney

The patent shows "a concavo-convex reflector," identified in the drawings by the numeral 1. Its inner surface is highly polished. An outer casing, identified by the numeral 3, is attached to the convex back of this reflector, thereby producing an intermediate air space for cooling purposes, but this last-named feature of the device is not in issue here, and, consequently, may be dismissed from further consideration.¹ Within the concave of the reflector 1, and preferably at the focus thereof, a heating unit is arranged, which consists of a resistance wire wound around a core or bobbin and attached to a source of electric energy, so that when the wire is heated to incandescence, its heat rays² will impinge against the surface of the reflector, and in turn be reflected therefrom in substantially parallel lines, and in the form of a "beam." Hence, these heaters are known to the trade as beam heaters (Dep. of Deft's witness Beam, Rec., 89).

A protective cage, made of wires and of arched form, is placed over the front of the reflector for protecting purposes.

¹ This intermediate air space feature is covered by claim 3, not sued on.

² We use the term heat rays merely as a concession to popular parlance. Scientifically it is inaccurate.

A marginal annular flange, designated in the drawings as 3a, extends around the edge of the reflector in order to protect the outer exposed edge of the reflector from being heated. The device is mounted on an upright standard fastened in a substantial circular base, and a handle is provided at the top for moving the heater from place to place.

There are four claims in the patent, but on this appeal we shall rely only upon claim 1. In the lower court we contended that claims 2 and 4 were also infringed, but the court held against us in that respect, and we shall not here challenge that holding.

Claim 3 relates to the supplement back 3 providing an air space between it and the reflector 1. The defendant's heater has not that feature and it was not charged to infringe upon this claim.

This leaves for consideration on this appeal only claim 1. The lower court held that it was not infringed. Was that decision correct? We claim that it was not, and the only question for this court to consider is the infringement of claim 1 of this patent. Said claim reads as follows:

"1. An electric heater, comprising a concavo-convex reflector, a heating unit supported at substantially the focus of said reflector, an annular member extending outwardly from the margin of said reflector, and a protective cage having guard wires arched between opposite sides of said annular member."

This is a combination claim, and its elements sever-

ally stated are as follows: (1) A concavo-convex reflector; (2) a heating unit supported at substantially the focus of the reflector; (3) an annular member extending outwardly from the margin of the reflector; (4) a protective cage having guard wires arched between opposite sides of said annular member, that is to say, arched over the front of the reflector.

It is to be observed that these elements are individually characterized by comprehensive language. The only limitation on the reflector is that it shall be concavo-convex. The heating unit must be supported at substantially the focus of said reflector, but otherwise it is not limited, that is to say, it may be supported transversely of the axis, or longitudinally of the axis, or in any other manner, so long as it is at substantially the focus.

The annular member extending outwardly from the margin of the reflector is unlimited as to form. It may be flat or round, or any other shape, so long as it is annular, and its only limitation is that it must extend outwardly from the margin of said reflector.

The protective cage is limited only by the requirements that it shall be composed of guard wires *arched* over the front of the reflector.

These heaters are generally known to the trade as "beam heaters." The defendant's expert witness, whose name by a curious coincidence is Beam, when testifying regarding heaters of both plaintiff and defendant, at the bottom of page 88 and top of page 89 of the record, says:

"The object of both heaters is to project the heat from the reflector out into the room in the shape of a beam, as nearly solid as possible, without having those heat waves scatter around in other portions of the room, and for that reason they are generally designated by the trade as beam heaters."

So much for the mechanical features of the device. We now address ourselves to its essential principle and mode of operation.

FUNDAMENTAL PRINCIPLE OF THE INVENTION

The Brown heater in suit involves a scientific principle, which consists, broadly speaking, in the utilization of radiant energy in a certain specific manner. When the electric coil (the heater element) receives its appropriate charge of electric current, it is thrown into a state of molecular vibration. A portion of these vibrations are absorbed by the coil and manifest themselves in the form of heat, producing incandescence of the coil. But the remainder of these vibrations set up similar vibrations in the surrounding medium (the ether) in the shape of spherical waves of radiant energy, and these waves of radiant energy impinge upon the surface of the reflector at a very high rate of speed (approximately 186,000 miles per second³). When this radiant energy strikes the surface of the reflector, a small portion thereof is absorbed by the reflector itself resulting in a heat-

³ This is the velocity of light; but light and heat are both manifestations of the same character of energy differing only in frequency of molecular vibration. In respect of rate of travel they are similar.

ing of the reflector, while the remainder is reflected from the surface at the same angle at which it strikes the reflector. In technical language the angle of incidence is equal to the angle of reflection as in the case of light. Now, if the reflector were of flat area, these rays of radiant energy would be reflected indiscriminately throughout the surrounding space in all directions. In fine, they would scatter in divergent lines. If, however, the surface of the reflector, instead of being flat, is concave, a different result will follow; and if that surface is a true parabola, then the radiant energy waves would be reflected therefrom in straight lines, producing a cylindrical shaft or beam. This is due to the mathematical law applicable to a parabola. That law says that in a parabola the distance from the focus to any point on the curve is exactly equal to the distance from that point to a fixed line in the rear of the parabola called a directrix. This does not convey a very clear idea to the popular mind, but in substance it simply means, when applied to the matter in hand, that radiant energy waves emanating from the focus of a parabola will be reflected in parallel lines, and as the circumference of the mouth of the parabola is circular, the result must necessarily be a cylindrical shaft or beam of radiant energy circular in cross-section and having a diameter approximately the same as the diameter of the mouth of the parabola.

The parabolic reflector is therefore the most perfect form for the projection of radiant energy. If,

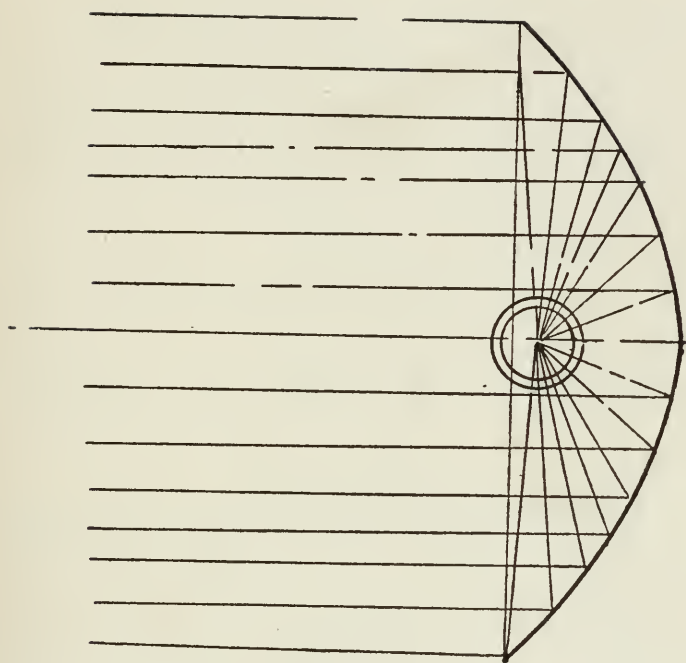
however, instead of having a perfect parabolic reflector, we have one approximating thereto, such as the segment of a circle, or, popularly speaking, a hemispherical reflector, then practically the same result will follow as in the case of a parabolic reflector. The difference will be manifested only in a slightly less perfect form of the shaft or beam. This difference, however, is so slight as not to be appreciable from a utilitarian point of view. Hence, we may say in a popular sense that the results in the two cases are the same, at least this is true in the sense of the patent law, which looks upon substantiality rather than upon minute variance.

Now, when this shaft or beam of radiant energy emanating from the reflector impinges upon any object which may be in its path, it produces in that object a corresponding state of molecular activity and the sensation of heat follows. At the same time the surrounding space outside of the shaft or beam is not affected. The action of the shaft or beam is localized upon the object within its path, because that is the only object which it strikes. Consequently, all portions of the surrounding space outside of the line of travel of the shaft or beam is unheated, and only the object within its path is heated. This can be demonstrated by standing within the line of travel of the shaft or beam, thereby experiencing the sensation of heat, and then by moving outside of its line of travel you will experience no sensation of heat. In other words, the radiant energy emanating from

a Brown heater is not utilized for heating an entire room, as in the case of a stove or a steam radiator, but is utilized only for heating a specific object within the line of travel of the shaft or beam. This is the fundamental principle of the Brown heater from the scientific point of view.

On the adjoining page is a cut illustrating the principle of a Brown heater. It shows the heat rays travelling in parallel lines and producing a "beam."

We do not claim that Brown was the first to utilize radiant energy reflected from a reflecting surface for heating objects. That generic principle was known prior to the Brown patent, as we shall hereafter point out. What we do claim is that Brown was the first in the art to devise a practical form of electric heater which by reflection produces a perfect shaft or beam of radiant energy for heating any object coming within its line of travel. Efforts in that line had been made by others, but the devices produced by them did not solve the problem of producing a substantially perfect shaft or beam of reflected radiant energy. The problem to be solved was the production of a substantially perfect shaft or beam of radiant energy to be directed against a particular object for heating that object. Prior inventors essayed to solve that problem and produced devices of many different kinds, but none of them solved the problem or produced what was desired. Brown did solve the problem, and to that extent his patent is entitled to a liberal construction.



BROWN HEATER

The lower court held against us on this point by reason of the prior art, and that ruling is assigned as error. This necessitates a review of the prior art.

THE PRIOR ART

The prior art in this case is represented by certain patents, (one English and five United States patents), certain printed publications consisting of electrical journals, and certain devices manufactured by the plaintiff at San Francisco prior to the date of the patent in suit. We herewith catalogue these devices in their chronological order, viz:

1. U. S. patent of Porter 684,459, of October 15, 1901
(Defendant's Exhibit N).
2. U. S. Patent to Morse, 881017 of March 3, 1908
(Defendant's Exhibit F).
3. U. S. Patent to Shoenberg, 1,109,551 of Sept. 1, 1914
(Defendant's Exhibit I).
4. English patent to Simplex Conduits, Ltd., 19,971 of September 4, 1914
(Not marked with any exhibit mark).
5. U. S. Patent to Warner, 1120003 of December 8, 1914
(Defendant's Exhibit H).
6. Early Majestic heaters of 1915
(Defendant's Exhibits A, B, C and D and Plaintiff Exhibit 6).

7. U. S. Patent to Geiger, 1194168 of August 8, 1916

(Defendant's Exhibit G).

PRIOR PUBLICATIONS

The Electrical Times and Electrician, published at London at various times from January 1912 to August 1916, showing devices known as "The Ferranti Fires," "Calor Electric Fire," "Redglow Fire," "Plexsim Fire," and the "D. G. Bowl Electric Fire."

Of these it may be remarked that the "D. G. Bowl Electric Fire," represented by Defendant's Exhibit 10, was not published until August 31, 1916, and as the date of the Brown invention was at least as early as April 5, 1916, this publication must be ignored as being too late.

In regard to the publication of "Plexsim Fire," represented by Defendant's Exhibits 8 and 9, this is the same device shown in the prior English patent to Simplex Conduits, Ltd., defendant's exhibit above referred to as unmarked, and as the details are more clearly shown in the patent itself, we shall confine our remarks thereto.

In regard to the other named devices, "Ferranti," "Calor" and "Redglow," represented by Defendant's Exhibits 1, 2, 4, 5, 6 and 7, they are all of substantially the same character, and we shall refer to them hereafter under the general term "Ferranti Fires," as did the lower court.

It may also be remarked that defendant put in

evidence a publication entitled "Prometheus," Defendant's Exhibits 13 and 14, but that publication is in German, and as no translation of it was put in evidence in this case, we apprehend that the court will not concern itself regarding its contents. And furthermore, the picture in said exhibit 14 appears to be a picture of a telephone with some kind of a sound collecting device of a bowl shape and it does not appear to be an electric heater at all. Under these circumstances we shall pay no further attention to it.

Defendant also put in evidence two publications, exhibits 3 and 15, showing the well-known Benjamin Electric light bulbs enclosed within a reflector; but they are not applicable to any issue herein and we shall pay no further attention to them, pursuing the same course as did the lower court.

In this connection we also desire to state that the learned Judge of the lower court discussed and treated as a part of the prior art an English patent to Kempton, No. 12320 (Rec., 26), and an English patent to Taylor, No. 102070, said to be dated November 16, 1916 (Rec., 27). In this behalf we desire to point out that neither of these English patents was put in evidence in this case and neither of them appears in the record here. There was no warrant on the part of the lower court in referring to those patents or taking them into account when construing plaintiff's patent. We have catalogued above all of the prior art as produced in evidence in this case and

forming a part of this record on appeal. It is upon such record and such record alone that this court must decide the case.

We now address ourselves to the prior devices *seriatim*.

PORTER PATENT, NO. 684,459, OF OCTOBER 15, 1901
(Defendant's Exhibit N.)

While this patent is entitled an "Electric Heater," the specification states that it belongs to that class of electric heaters known as "electric fan heaters." The device is an electric fan, and is provided with a series of angularly disposed blades which are caused to revolve at high velocity as in the case of an ordinary electric fan. These fan blades are made of carbon and connected with a source of electricity whereby they become highly heated, so that we merely have an electric fan provided with hot blades. These blades act to heat the surrounding air, and as they revolve with great velocity, they throw out into the room large volumes of hot air; that is to say, instead of throwing out cold air for cooling a room as in the case of an ordinary fan, they throw out hot air for the purpose of heating a room, and this hot air is not thrown out in the shape of a beam, but indiscriminately in all directions. The specification says (p. 1, lines 13 et seq.):

"The object of my invention is to electrically heat the blades of a fan without adding thereto or mounting thereon any resistance material, the blade being it-

self heated directly by a current passing through it."

This does not involve the principle of heating by radiant energy, and is wholly different in principle, construction, and mode of operation from the Brown heater.

And still further, it does not contain all the elements of the Brown combination. It has no concavo-convex reflector or a reflector of any kind. It has no heating unit supported at substantially the focus of the reflector. Why it was put in evidence passes our comprehension. It has no relevancy whatever, at least no more relevancy than an ordinary electric fan.

MORSE PATENT, 881017, MARCH 3, 1908
(Defendant's Exhibit F.)

This device is a small hand implement used by physicians for therapeutical purposes. It consists of an ordinary electric light bulb extending transversely into what the specification calls "a shell or hemisphere," provided on the edge with a soft pad where it comes in contact with the human body. The specification does not state of what material this shell or hemisphere is made. Immediately in front of the light bulb and across the shell is arranged "a screen 5 of coarse wire mesh or similar construction." This is for the purpose of protecting the glass bulb from injury. In operation the physician grasps the implement by the stem or handle of the electric light bulb and places the open mouth of the shell against the affected part of the human body to be treated,

whereby the heat from the electric light will be concentrated against the affected spot. In other words it seems to be a kind of cupping implement for heating a particular spot on the human body, and this it does by confining the heat within the cup. *It is merely a hot air container.* It heats the air enclosed within the cup and retains the hot air within the cup until it performs the function of heating the body by conduction. It does not involve the principle of reflecting radiant energy either in the shape of a beam or otherwise. It has no concavo-convex reflector nor a reflector of any kind. It does not heat by reflection. It does have a concavo-convex shell, but this is not shown to be a reflector. The word reflector is not used in the specification. It would answer its purpose just as well if made of non-reflecting material. A tea-cup or tumbler or mush-bowl would answer the purpose. But however that may be, the specification does not show or mention a reflector of any kind. Neither does it have a heating unit supported at substantially the focus of the reflector, unless it may be said that an ordinary electric light bulb is a heating unit. Neither does it have a cage consisting of arched guard wires. In that connection it has only a flat wire mesh screen, and its sole function is to protect the delicate glass bulb from injury, which is a wholly different object from that accomplished by the arched guard wires of the Brown patent.

And still further, the object of this device is wholly different from that of Brown. It is a physician's

implement to be carried around by him in his pocket or medicine case until he arrives at the residence of the patient, and then he connects it to an electric cord and places the device over the affected part of the patient's body for imparting heat; whereas the Brown device is a portable heater stationed in a room and adapted to be moved about from place to place for the purpose of heating objects that come within the path of the radiant energy beam.

We submit that this Morse device does not exhibit the principle of reflecting radiant energy in the shape of a beam against an object for the purpose of heating the same. The utmost that can be said of it is that it may be considered a prophecy of what afterwards followed; but prophecies are not anticipations.

SHOENBERG PATENT, 1,109,551 OF SEPT. 1, 1914
(Defendant's Exhibit I.)

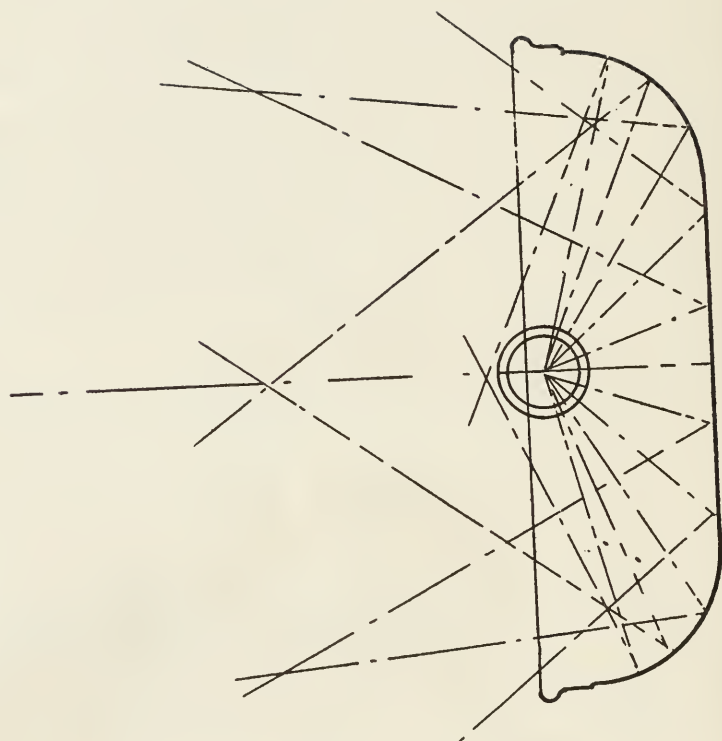
This patent shows a reflector, which is said to be "somewhat hemispherical or dome-shaped" (Spec., p. 1, l. 50). The use of this word "somewhat" is suggestive, and upon reference to the drawings, as well as to the actual device itself (Defendant's Exhibits A, B, C, and D), it will be seen that the interior of the reflector is of irregular contour. It is not hemispherical, but "somewhat" hemispherical. In one of them (represented by Plaintiff's Exhibit 6) it is like a pie plate. In others it is dish-shape. In still others bell-shaped. In all of them the interior

contour is irregular. The result which flows from this construction is apparent at a glance. The heat rays from the electric coil impinging against this irregular contour will be criss-crossed and reflected in all directions, so that when they emerge from the mouth of the reflector they will scatter in all directions and will not assume the form of a shaft or beam. Colloquially speaking, they will play tag with each other within the bowl of the reflector. This results from the fact that the reflector is not purely concave on its interior, but is of irregular contour. In discussing this matter the witness Henry says, at page 99, that the form of such reflector

"is such that the rays from different portions of the heater unit itself, as reflected from different portions of the reflectors themselves, will be very divergent in the aggregate, and in the case of any individual point or ray, it will be in criss-cross, and will, in turn, criss-cross other rays in a way to produce a very highly inefficient radiant emanation. This radiant emanation cannot be called a beam in the sense of that which is producible and is produced by the reflector of the Brown patent, with the heating element arranged at focus or about an axis about which several foci will lie."

This is clearly illustrated by the cut on adjoining page.

We say that the reflectors of the Shoenberg patent do not and cannot from the nature of their construction and mode of operation produce the radiant beam



SHOENBERG HEATER

which characterizes the Brown invention; but on the contrary they produce an irregular mass of scattered divergent beams throughout all parts of the room in front of the heater. Shoenberg may have conceived the desirability of the beam, but the device which he suggested as means for obtaining that beam was inefficient and ineffective for that purpose.

The history of the Shoenberg patent fully corroborates us. The plaintiff is the owner of the patent, and undertook to market the device covered thereby. Exemplars thereof are in evidence as Defendant's Exhibits A, B, C and D and Plaintiff's Exhibit 6, and were put on the market in the latter part of 1914 and exploited during 1915. But they proved unsuccessful and were abandoned, being entirely superseded by the invention of the patent in suit. This places the device of the Shoenberg patent in the category of unsuccessful, impractical, and abandoned experiments. It may even be conceded, for the sake of argument, that Shoenberg had a conception of the desirability of using the radiant beam principle, though that is doubtful, but conceptions are not inventions, nor do they become inventions until they are embodied in a practical form. Therefore, even if Shoenberg had the conception, he failed to embody it in a practical form, and the evidence in this case is plenary on that point.

When we come to discuss the early Majestic devices made under the Shoenberg patent we shall illustrate the above views further.

SIMPLEX ENGLISH PATENT 19971 OF SEPTEMBER 4, 1914
(Not identified by an exhibit mark.)

It appears from the face of this patent that it was "accepted" on September 4, 1914, and under the English law this means its date of issuance. Of course its date of application is immaterial, inasmuch as English patents can operate as anticipations or as a part of the prior art only from the date of their issuance.

The patent was issued to a corporation entitled "Simplex Conduits Limited," but is referred to in the evidence merely as the Simplex patent. The device itself is referred to in some of the publications as the "Plexsim Fire." The reflector is shown most clearly in Figs. 1, 2 and 3 of the Patent. It is also clearly shown in Defendant's Exhibit 9, which is a photographic copy of page 12 of a London publication entitled "Supplement to the Electrician," dated October 6, 1914. It is also shown in a model of the device itself produced by plaintiff and marked "Plaintiff's Exhibit 7" (Rec., 130).

It will be seen that this reflector is of conical shape on the exterior and is longitudinally corrugated or fluted on its interior. The specification says (p. 1, lines 36 et seq.):

"A is a conical reflector, which may be made wholly of copper or of steel or cast metal lined with copper. The inner surface is highly polished and is usually corrugated as shown at a, Fig. 3;

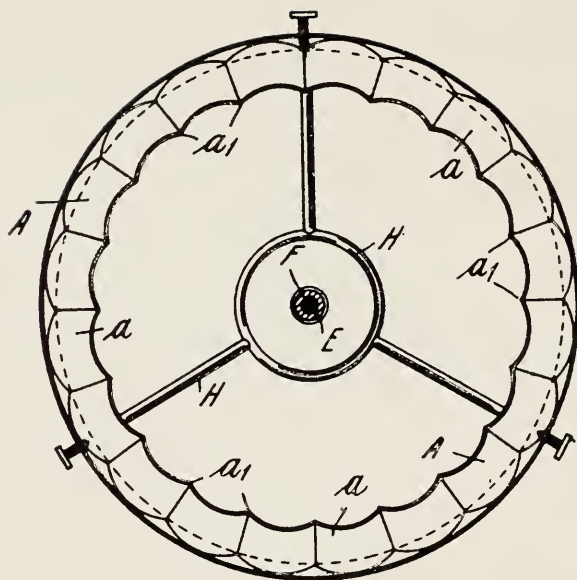
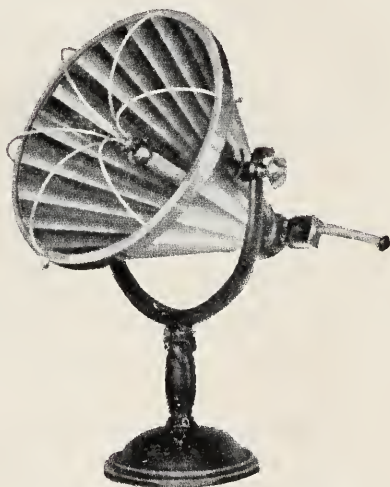


FIG. 3.

SIMPLEX ENGLISH PATENT



SIMPLEX ENGLISH HEATER
(Defendant's Exhibit 9)

the meeting edges a' of the corrugations being lines radiating from the apex of the cone."

The first cut on the adjoining page is a view in cross-section of Fig. 3 of the patent. It shows the corrugations on the interior. The lower figure is a reproduction of Defendant's Exhibit 9, where the device is styled "Plexsim Fire."

The heater element of this device is arranged longitudinally and extends from the apex of the cone centrally through the cone to its mouth. Very nearly the whole specification is taken up with a description of this element, as will be readily understood from the fact that the invention was considered to reside therein, it being said in the specification,

"the invention also relates to the mode in which the heating element is attached to the reflector and connected to the terminals."

The mouth of the reflector is said to be fitted with "a grating of coarse wire mesh or the like," and this is clearly shown in the plaintiff's model exhibit No. 7.

Now note the mode of operation of this device. When the heat rays from the coil strike against the interior of the reflector they strike into the grooves or channels formed by the corrugations on the interior. There appears to be twenty of these corrugations. These rays strike into these grooves or troughs at different angles, and as the angle of incidence is equal to the angle of reflection, they will be reflected in the form of divergent rays, thereby producing

within the cone an indiscriminate mass of divergent rays, and most of them will cross one another, which we term "criss-crossing." The rays will emerge from the cone in divergent lines, so that we will have coming from the mouth of the cone a mass of rays scattering in all directions, and not a solid shaft or beam in parallel lines. Indeed, some of the rays coming from the Simplex coil will not strike the reflector at all, but will pass outside of its edge. This, therefore is an instance where, if it be conceded that the patentee had a conception of the desirability of utilizing the radiant beam principle, yet he was not able to put it into such practical form as would carry out the conception successfully.

Referring to this device the expert witness Henry says at page 105:

"A reflector of a form corresponding with the casing or outer sheet of the reflector of this patent would not throw a beam in any sense of the word. Most of the heat rays will be reflected back and forth within the heater device itself, resulting in heating up the reflector, rather than in securing reflection. The few rays that will be thrown outwardly will be criss-crossed in all directions, doing just the contrary of a beam. The shape of the reflector, the flutes that are in it, its long heat element, and its conical lines would produce that criss-cross."

And on cross-examination, at page 110 of the record, where he was questioned regarding this Simplex heater as shown and illustrated in Defendant's

Exhibit 8, and a quotation therefrom was read, the following testimony was given:

"Q. * * * In view of that, are you still of the opinion that the patent in suit is the first disclosure of the beam type of heater?

A. I certainly am. This reflector that you have referred me to, and particularly the diagram showing the arrows indicating supposititious divergent rays, I will say that in all probability those specific rays will be thrown out from that form of reflector, and that form of heater, but that is about all of the rays that will be thrown out, a very, very small percentage of the total heat. The rays that come from every other point on that long heat-generating unit will be thrown at all kinds of angles, every possible angle. So that the actual rays which will emanate from there in an axial direction are but such a small percentage of the total that I am convinced more than ever that that form of reflector would be inefficient for the production of a beam. There is no question but that the man wanted to produce a beam, but he did not do it in this form of reflector, or in that form of heater. He would have to get up pretty close to that to feel the radiant energy. * * * It will probably generate as much heat— * * * but that heat will not be directed in the form of a beam with a sufficient efficiency to warrant calling that form of heater a beam heater. It will get hot itself, it will heat air around it locally a little bit, and heat will be extending that way; but in the Brown form of heater, the idea was and the result was that a larger percentage of that heat is gathered and thrown out in the form of a beam as radiant energy. This diagram which you have handed me is highly misleading; it is purely an advertising stunt; it is a salesman's idea of how to present a

thing to the public and get them to buy, and I have no doubt he put it over. But it is as misleading as a diagram could be as regards the rays that emanate from the inside of that form of heater in action. * * *

It shows a total misconception of the construction of a reflector and a heat unit to produce a radiant beam."⁵

We say of this English heater that if the inventor had a conception of the desirability of utilizing a radiant energy beam for heating purposes, he failed to embody that conception in a practical form producing the radiant beam of the Brown heater. It seems to be no more than a mental conception without embodiment in practical form.

But did the inventor have a conception of the radiant beam principle? If he did, it was certainly a very vague one and not sufficient to instruct others regarding its principle or the mode of embodying it in practical form. In this behalf defendant places reliance upon the "provisional specification" of the patent.

Under the English law a person may file a provisional specification, which is in substance and effect nothing more than a vague, indefinite and general description of an invention which has not yet been completed, but which will be completed later, and when so completed will be described in what is known

⁵ This testimony refers to the diagram of the Simplex heater shown in Defendant's Exhibit 8 (p. 591 of Electrical Times).

as the complete specification. The English patent is not granted on a provisional specification, but only on a complete specification, and if no complete specification is ever filed, the provisional specification becomes *functus officio* and is analogous to what is known in the American law as an abandoned application, being ineffective for the purpose of anticipating a subsequently granted patent to another. Therefore, any statements made in a provisional specification are intended as mere general statements without specific description of detail.

Now in this English provisional specification we first find this statement:

"This invention has reference to electric radiators and the object is to provide an apparatus of convenient form in which the radiant heat issues in the form of a condensed beam of rays, divergent, approximately parallel, or convergent, as the case may be, and adapted to be pointed in any desired direction, horizontally or vertically."

It is difficult to understand precisely what is meant by this vague language. It would seem therefrom that sometimes the rays were to be divergent, at other times approximately parallel, and at other times convergent. The only rational explanation we can suggest is that in the operation of the device some of the rays will be divergent, others approximately parallel, and still others convergent. But this is not a description of the beam type principle. According to the beam type principle all the rays must be

parallel and be consolidated into a cylindrical form.

In referring to the reflector, the provisional specification says:

"The reflector is preferably in the form of a cone; this being a shape which can be cheaply rolled into form out of sheet metal; it is usually made of or lined with sheet copper, the inner surface being highly polished. * * *

The form and proportions of the reflector depend upon circumstances; it should be deep enough to fully house the heating element, and to further protect the latter, the open end of the reflector should be fitted with a detachable rim carrying a grating of coarse wire mesh or the like. * * *

The reflector may with advantage be corrugated or fluted, as this stiffens and improves its internal appearance when the heating element is incandesced."

It will be seen from the foregoing that there is no sufficient disclosure in this provisional specification of a smooth-faced reflector showing the beam type principle, as now understood in the art, nor is there any sufficient disclosure of how to build a structure disclosed in said specification. It is simply a vague general indefinite pronunciamiento to the effect that the inventor was desirous of doing something without pointing out the method. There is nothing in our opinion in the provisional specification worthy of serious consideration.

But it is asserted by defendant, that the complete specification is a sufficient disclosure of a smooth-

faced parabolic reflector. We challenge this assertion. In the complete specification, which seems to have been filed some six months after the filing of the provisional specification, it is said:

"This invention relates to electric radiators of that type in which an electrically heated conductor is held in position in a movable reflector.
* * * The invention also relates to the mode in which the heating element is attached to the reflector and connected to the terminals."

The specification then proceeds to describe the conical reflector by referring to the drawings, and in that respect is exact. After describing the cone with its flutes and corrugations, the specification then makes this statement:

"or the reflector may be, in longitudinal section, in whole or in part of parabolic or the like contour, according to the form desired for the emergent beam of rays."

This seems to be the only place in the specification where any divergence from the cone is suggested. It amounts in substance to a statement that the reflector may be of parabolic contour either in whole or in part. In other words, it says to the inquirer for knowledge, if you don't care to make the reflector of conical form, as I have described, you can make it wholly parabolic or partially parabolic. But the patentee gives no directions as to how a parabolic form should be made and arranged. He shows no parabolic form in the drawings, nor does he describe

any such in his specification. There are many different forms of parabola, but not all of them are suitable for an electric heater. The form used by Brown is a shallow one, and that is the proper form for use. A long deep parabola would not be suitable or appropriate for the purpose in view. The English patentee does not tell us whether he would use a flat parabola or a long one. He merely says in substance to the inquirer, you may use any kind of parabola you please, but if you do use a parabola, you will have to design it yourself: I care nothing about such a device, and, therefore, I do not describe one. Such a disclosure as this is wholly and utterly insufficient for anticipatory or limiting purposes.

But further, if a parabola is used, are we to dispense with the interior corrugations and make it smooth-faced? The logical answer to this would appear to be in the negative. The patentee describes a cone with a corrugated interior, and then says that instead of such cone one may use a parabola. But he gives no directions to dispense with the corrugations. Hence, the inference is that the parabola must have corrugations on its interior. Such a parabola would be liable to the same objections as the fluted cone. It would not produce the radiant beam of the Brown patent.

We assert that this English patent is not a sufficient disclosure to anticipate Brown. The rule on this subject is thus stated in Walker on Patents § 57, p. 72 (5th Ed.):

"Novelty is not negatived by any prior patent or publication, unless the information contained therein, is full enough and precise enough to enable any person skilled in the art to which it relates, to perform the process or make the thing covered by the patent sought to be anticipated."

Is the disclosure of the English patent sufficient to answer this rule? Is it full enough and precise enough to enable a person to make the Brown heater? Can a person read out of that description the invention of the Brown patent? We think not. Clearly, the corrugated cone is no anticipation, and equally so, we think, is a corrugated parabola. The English patent discloses no smooth-faced cone, and surely not a shallow cone of any kind nor a smooth-faced parabola.

In conclusion, it is pertinent to inquire why this English device has never gone into use. The sample which we produced in evidence as plaintiff Exhibit 7 is probably the only one in the United States. The person who gave it to us says he got it from England. Brown testified at page 123 that none of those heaters had been on the market in the United States that he ever knew of, and that he had a good opportunity for knowing. Defendant produced no evidence of use either in the United States or elsewhere. It is safe to say that if there had been any such use, the evidence thereof would have been forthcoming. We may assume, therefore, in this state of the record, that this device has certainly never gone into use in

the United States and possibly nowhere else. This is the strongest evidence of inefficiency that could be produced, and convinces us more than ever that this English patent is nothing more than a mere paper patent which is wholly ineffective for the purpose of anticipating a valuable invention which has gone into universal use and displaced all antecedent devices intended for a similar purpose.

WARNER PATENT, 1,120,003, DEC. 8, 1914
(Defendant's Exhibit H.)

An exemplar of this patent was put in evidence as "Plaintiff's Exhibit 8" (Rec., 131). It does not embody the radiant beam principle. It shows a large hemispherical bowl of concavo-convex form, which is called in the patent a reflector, but no description of its reflecting qualities is to be found in the patent. The material of which it is made is not stated. It shows a heating element of large circular form and a central hole through which an ordinary electric light bulb is inserted. This circular heater element is not located "at or near the focus," but away from the focus near the mouth of the bowl. Back of this element and between it and the reflector is a shield in the shape of a band of metal, which prevents the radiant energy of the coil from impinging against the reflector. The front of the element is covered up with a large circular grid work of metal. Thus we have in the structure a heater element protected

at the back and front so as to prevent the heat rays of the element impinging against the reflector. The fundamental idea of the device is that a large volume of air will be heated by convection, and then this large volume of hot air will emerge from the mouth of the bowl and be discharged into the room for the purpose of heating the air in the room. The specification says, beginning at line 59 of page 1, that the device is so constructed that it "is capable of readily heating large volumes of air making it particularly useful for the heating of rooms." On this subject the witness Henry says at page 105 of the record:

"The object of this and other heaters in the art seems to have been the production of warm air, with the idea that the transference of warm air by convection will do the desired heating. The Brown heater is not intended to produce warm air, it being distinctly a radiant heater as distinguished from the type of heater indicated in the Warner patent."

And on page 106 the witness Henry continuing his description says:

"The manner in which the annulus carrying the resistance is formed and its location, materially away from any focal range, clearly indicates the intent of the patentee was not the employment of a reflecting surface to produce a beam, nor did he produce a reflecting surface, a heat unit which would produce a beam, but, rather, a container or circulating structure about which air would circulate and be heated."

All this is clearly apparent from the disclosure of the Warner patent. The device is simply a *collector of hot air which will be discharged in large volumes into the room as an indiscriminate mass in all directions for the purpose of heating all the air in the room by convection*. It is not a reflector in the true sense of the term. It does not disclose or show the principle of a radiant beam heater. *It is merely a hot air stove*. It is inferable from the record that this device was a failure and therefore abandoned. The patent is owned by the firm of Landers, Frary & Clark of New Britain, Conn., which is one of the large manufacturers of electric contrivances, and it can scarcely be supposed that said firm would not have pushed this device if it had been a successful one. Certainly it does not appear to be on the market at the present time. The testimony of Brown in reference to it is found at the bottom of page 123 and top of page 124 of the record, and is as follows:

“Referring to the other heater which has been offered in evidence here, the Warner patent (Defendant’s Exhibit H) I talked to some dealers and they tell me that that has been taken off the market by Landers, Frary & Clark, the manufacturers. I have endeavored to find another one in the city here but have been unable to do so.”

This Warner device, therefore, is another of the numerous efforts made to produce a successful portable heater, but which like the others utterly failed

and was consequently consigned to the limbo of abandoned experiments.

EARLY MAJESTIC DEVICES

(Defendant's Exhibits A, B, C and D, and Plaintiff's Exhibit 6.)

These devices are those illustrated in the Shoenberg patent (Defendant's Exhibit I) already considered. The history of the attempted exploitation of these devices has already been given in our brief on the Design patent in case No. 3616. To preserve the continuity of our argument we herewith repeat that history.

In 1914 the Majestic Electric Development Company was incorporated for the purpose of exploiting a portable electric heater. Edmund N. Brown and Milton H. Shoenberg were the two active parties in that corporation, and the company essayed to put on the market portable electric heaters made under the Shoenberg patent. The business was an experimental one at the start, Mr. Brown saying that it was "in a period of evolution," and they were experimenting all the time to see what was the best (Rec. 124). The first heater they put on the market in 1914 was of the pendant type, designated by the plaintiff's trade name "No. 1." The reflector was of small dimensions, made of nickel, and the shape was like a pie-plate. It was adapted to be hung from a lighting fixture in the ceiling or other point of suspension,

not to be moved about on the floor (Rec. 120). One of the devices was introduced in evidence and marked "Plaintiff's Exhibit 6" (Id.) This device was purely experimental. It proved unsuccessful and was soon abandoned (Rec. 122 and 124).

Shortly afterwards the shape of the reflector of this first device was changed from a pie-plate to that of a shallow dish resembling a soup plate. It likewise was made of nickel and intended to be hung from a point of suspension as in the case of the first device. One of the devices was put in evidence by defendant and marked "Defendant's Exhibit A" (Rec. 120). This likewise proved to be a failure and was abandoned (Rec. 122 and 124).

The next heater put on the market by plaintiff was one known by their trade name "No. 2." It consisted of a small nickel reflector of a flat dish shape mounted on a fluted column fastened in a base plate and adapted to be moved about from place to place in a room. It is represented by defendant's Exhibit B and was abandoned (Rec. 120-122 and 124).

About the same time another device was put on the market by plaintiff in which the reflector was similar to that of "No. 2," but was so arranged that it could be adjusted up and down on a vertical rod, and at the top of this rod was a glass knob adapted to be used as a handle for moving the device from place to place in a room. This device is represented by plaintiff's trade name "No. 3," and one of the devices is in

evidence as "Defendant's Exhibit D." It likewise was abandoned (Rec. 120-122 and 124).

Thus we see that so far plaintiff made three distinct efforts to produce a successful device, designated as No. 1, No. 2 and No. 3, and they all proved ineffective and were abandoned.

The next effort of plaintiff is represented by a series of devices known by the plaintiff's trade names "1b," "2b," and "3b." They all had a small bell-shaped nickel reflector, differing radically from the reflectors of No. 1, No. 2 and No. 3 and roughly resembling a bell (Rec. 121). In cross-section it resembled an old fashioned lady's bonnet. They were gotten up with the idea of being improvements in appearance upon the dish-shaped reflector devices which had preceded it and had been abandoned.

The device "1b" was of the pendant type, adapted to be suspended from a fixed point. The device "2b" corresponded to the original No. 2, except for the change in the shape of the reflector, while "3b" was the same as "2b" except for the addition of a second element. In other words, "1b" was to take the place of No. 1, "2b" was to take the place of No. 2, and "3b" the place of No. 3. These heaters were put on the market in the fall of 1915, but they proved to be unsuccessful and were soon abandoned (Rec. 121-124).

During that time the plaintiff had also gotten up another heater resembling in appearance an oil stove, but that also was abandoned. It cuts no figure in this

case, except to show another of the numerous unsuccessful experiments of plaintiff put forth in search for a successful heater.

The next heaters put on the market by plaintiff were known by their trade names "No. 4," "No. 5" and "No. 6"; but they were of the box type form, and cut no figure in this case either one way or another. They show the general appearance of a fire place or grate, somewhat similar to the old style gas heaters with asbestos backing (Rec. 121).

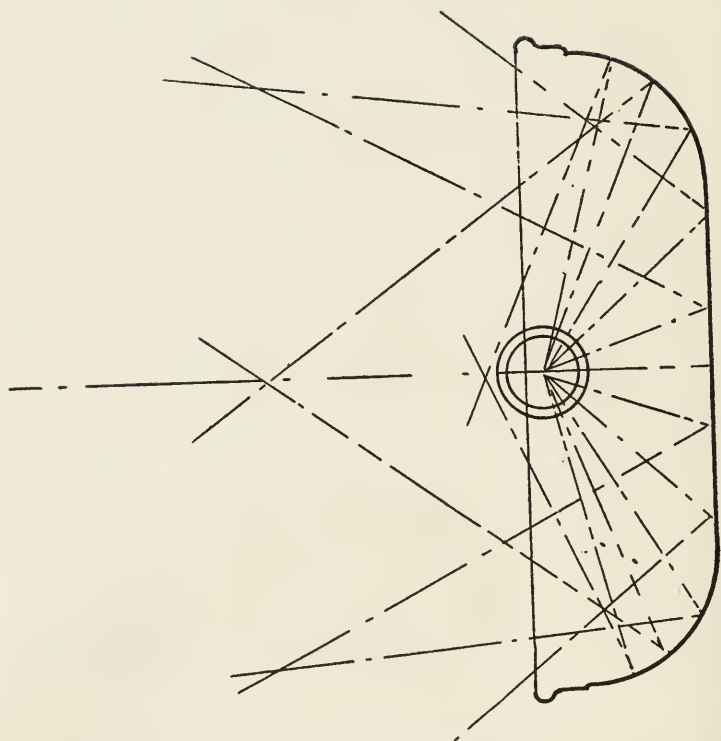
All of these early devices were abandoned as unsuccessful experiments (Rec. 124). They did not embody the principle of the radiant beam heater. They did not produce a cylindrical shaft or beam of parallel rays. On the contrary, they produced an indiscriminate mass of divergent, convergent, and criss-crossed rays which attempted to heat all the air in a room and by means of hot air to impart heat to the objects in the room.

Witness Henry, at page 99 of the Record, says of these devices:

"* * * but the form of the reflector in each of these exhibits is such that the rays from different portions of the heater unit itself, as reflected from different portions of the reflectors themselves, will be very divergent in the aggregate, and in the case of any individual point or ray, it will be in criss-cross, and will in turn criss-cross other rays in a way to produce a very highly inefficient radiant emanation. This radiant emanation cannot be called a beam in the sense of that which

is producible and is produced by the reflector of the Brown patent with the heating element arranged at the focus or about an axis on which several foci will lie. In either of the last two instances employing a concavo-convex reflector, that is, one which is curved at every point in such a way that the curve is expressable by a mathematical formula, as is that of a circle, or any of the conic sections and certain other curves; in the case of such a concavo-convex reflector with a heat source or unit mounted about its foci, the emanating rays will be conserved in the shape or form of a beam, whose cross-section will be more or less circular, according to the disposition of the heat unit within the reflector, and the shape of the reflector surface. Such a reflector beam is generated in and emanates from the Brown heater as constructed in accordance with the patent in suit, and likewise from the heater of the defendant's construction. In the reflector of Plaintiff's Exhibit 6, the greater portion of the reflector, or at least, that which received the greater portion of the rays, emanating from the heat unit, and which, to be efficient, should be reflected as a beam, is in reality a flat surface. The same applies to the other exhibits, with the exception of Defendant's Exhibit "C," in which there is likewise a flat surface, but not of quite so great proportions. This flat surface will reflect radiant rays in practically every direction."

This is illustrated graphically by the diagram on adjoining page, which is a cross-section of the early Majestic heater No. 2 (Defendant's Exhibit B). In this diagram we have shown the heat rays as they occur in actual practice. They are an indiscriminate mass of divergent, convergent, and criss-crossing rays.



SHOENBERG HEATER

There is no beam of parallel rays. The construction of the reflector prohibits it. Hence the failure of the device for performing the function of Brown's invention.

ADVENT OF THE HEATER IN SUIT

At this stage of the game the heater covered by the patent in suit was devised. The exact date of the invention is not given in the evidence, but it does appear that as early as April 4, 1916 (Rec. 39 and 44), plaintiff made and produced a sample of this heater and gave to it the name "No. 7," by which name it will be hereafter referred to. The exemplar of the device in evidence is marked "Plaintiff's Exhibit No. 2" (Rec. 39). It proved to be a success from the start, and thereupon all the prior heaters were permanently abandoned, and No. 7 proved to be the successful device for which Brown had been striving since 1914. It was the culmination of his experiments. In this connection Brown says at page 122 of the record:

"Our object in getting out so many styles of these heaters was that I knew I did not have the one that I wanted until I got the No. 7. I was striving until I hit on the No. 7. I did not have the one that I thought was the proper heater. I tested that matter out by putting them on the market and before the trade and selling them, and in this chain of evolution I finally reached the No. 7 heater, and I found that out as I put them

out to the trade. The others were abandoned all excepting Nos. 4, 5 and 6 (box type heaters) which we are selling today, but that is a different type of heater. After our No. 7 came on the market we did not put out any other style or change the design."

With this sample heater of April 4, 1916, in hand, Brown went East in that month for the purpose of securing bids for its manufacture on a large scale (Rec. 39). He visited persons in Canada, New York, and Philadelphia, showed the sample heater to them, and got quotations on the manufacturing cost (Id). He was absent on this trip several months and returned to San Francisco in August, 1916 (Rec. 40). At that time he concluded to manufacture in San Francisco and immediately entered into a contract with the Boesch Lamp Company for the manufacture of the heater in quantities (Rec. 40). Dies, patterns, and other paraphernalia were prepared by the Boesch Lamp Company on a large scale and the manufacture of the No. 7 heater was begun in the fall of 1916 (Hiller, pp. 44-5, Record).

The first sale was made in October, 1916, to Holbrook, Merrill & Stetson and Harper & Reynolds at Los Angeles totaling 500—250 to each of these firms (Rec. 38). The heater gave instant satisfaction (Id.). During the remainder of the year 1916 (about two months) plaintiff sold from 7000 to 8000 of the heaters, sending them throughout the entire United States (Rec. 40). The demand increased, and during

the years 1917, 1918, 1919, and up to August, 1920 (the time of this trial), plaintiff sold from 350,000 to 400,000 (Rec. 40). The selling price at first was \$7.50 each, but at the time of the trial had increased to \$11.00 (Rec. 41).

A factory for their manufacture was started at Philadelphia to supply the eastern demand (Rec. 40), and an office was opened in Kansas City (Rec. 40) to accommodate the middle-west territory, the parent factory being at San Francisco. From its inception in 1916, the business has increased with "leaps and bounds" (Rec. 122) until now it has reached enormous proportions, and what was once an infant industry is now a large and successful business extending not only throughout every part of the United States, but into China, Japan, New Zealand, Australia, Spain, France, Great Britain, Italy, Denmark and the South American countries (Rec. 40).

It is pertinent at this point to remark that the various forms of heaters attempted to be marketed by the plaintiff prior to the advent of No. 7 were experimental, being put on the market in an effort to ascertain what was most satisfactory, and they were all abandoned as unsuccessful experiments immediately upon the advent of the No. 7 heater in October, 1916. Since then no substantial changes have been made in the No. 7 heater, and it is in substantially the same form now as it was in October, 1916, the only addition made being a hinge in the standard for vary-

ing the angle of the heat rays. That feature is covered by a separate patent to the plaintiff.

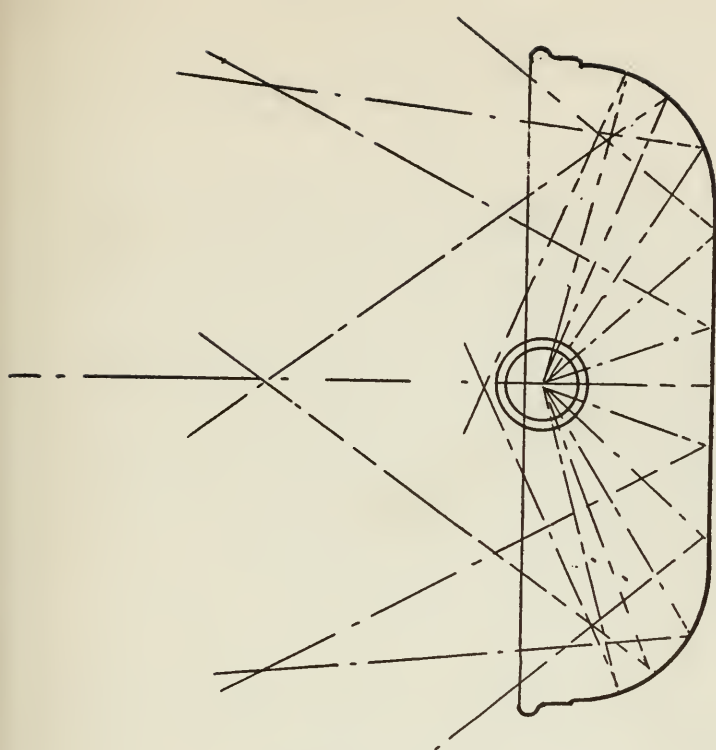
These facts speak the language of eloquence. They establish the facts that the early Majestic heaters made under the Shoenberg patent were unsuccessful and abandoned experiments and that the heater of the patent in suit (Brown's No. 7) solved the problem which had for years puzzled the minds of all persons engaged in the art. At this point it will be instructive to compare the mode of operation of the reflector of the patent in suit with that of the Early Majestic No. 2, already illustrated. Accordingly—on adjoining page we place side by side the two reflectors showing the travel of the heat rays. A mere glance is sufficient to expound the situation.

Only one other patent was put in evidence by defendant, viz:

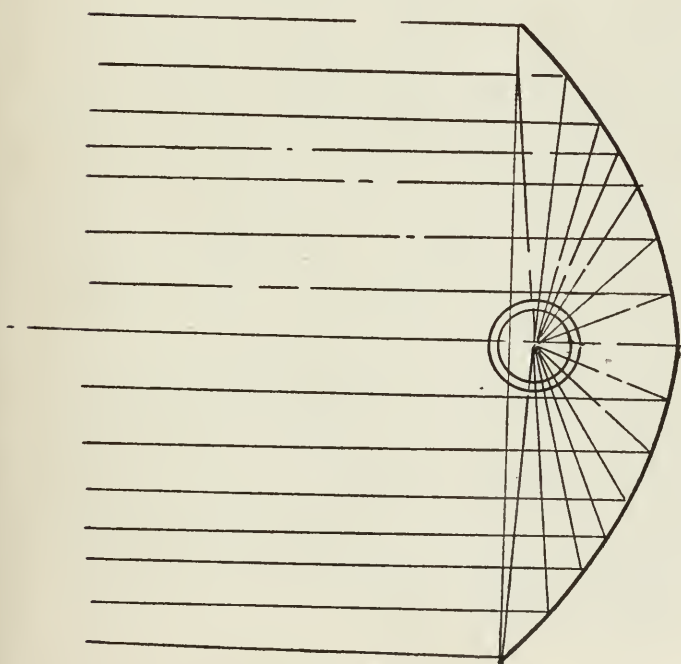
GEIGER PATENT 1194168, OF AUGUST 8, 1916
(Deft's Exhibit G)

This patent is too late to be a part of the prior art. The evidence shows Brown's invention of the patent in suit was made at least as early as April 4, 1916. This Geiger patent was not issued until August 8, 1916. Hence it is too late. Prior patents speak only as of the date of their issuance.

But even if it were a prior patent it cuts no figure in this case because it does not show the radiant beam heater. It shows a reflector in the shape of a seashell



SHOENBERG HEATER



BROWN HEATER

having corrugations or flutes on its surface, and two large electric light bulbs are arranged in front of it. It may be admitted that some small radiant energy would impinge on the surface of the reflector, but it would be so small an amount as to be negligible for warming purposes. And furthermore, the heat would be reflected in divergent rays and not in the form of a beam. This is too palpable to admit of discussion.

PRIOR PUBLICATIONS

THE FERRANTI FIRES

These publications show certain heating devices which may be designated as "The Ferranti Fires." The verbal description given is rather vague and indefinite, and all we can get therefrom is a general idea of the device. It shows a circular copper bowl of polished copper of curved sides and flat bottom, and on the bottom of this bowl is located a circular plate of quartz glass, which is caused to become a bright red by contact with a spiral resistance unit in front of which it is clamped. The idea seems to be to heat up this quartz glass plate. The resistance element is wound in the form of a spiral and is not shown to be at the focus. The device is mounted on four legs, and there is no wire guard or cage in front.

Defendant's Exhibit 4 (page 362 of the Electrical Times of March 6, 1913) is the only one of the exhibits which attempts a detailed description, and there we find the following:

"The resistance spiral, which forms the basis of the heating element, is thoroughly insulated, and is so disposed that expansion and contraction may take place without damage to the spiral. The alloy used for the resistance spiral is identical with that employed for cooker discs, and withstands high temperatures for prolonged periods. It is totally enclosed in a circular case formed by a metal rim, the back of which is closed by two discs of asbestos board with air spaces between to diminish the loss of heat. The front is covered by a quartz disc held in position by a cast-iron clamping ring. This becomes red hot several minutes after switching on, and is unaffected by the spilling of water or grease."

In defendant's Exhibit 1 (page 79 of the Electrical Times, January 25, 1912) it is said of this device:

"It consists of a closely wound spiral disc of nichrome or similar tape, interleaved with mica (a modified variety of the old Ferranti winding), and held in close contact with a circular plate of quartz glass six inches in diameter. The rated consumption is 800/900 watts, but in practice it is from 1,000 to 1050, which is sufficient to bring the wire and glass to a bright red heat. This disc is surrounded by a circular bowl of polished copper, which concentrates and reflects the heat rays. Like the Bastian heater, the greater part of the energy is given out as convected heat, but there is considerable radiant energy, and owing to the reflecting properties of the bowl, this can distinctly be felt at a distance of many feet. It has much the appearance of a red hot fire, hence its name, and its effect is much the same. * * * It can be used for toasting, grilling, or when horizontal, for heating liquids in flat-bottomed circular

vessels. Cigarettes or paper may be lighted by contact with the glowing quartz, and herein lies the danger which was pointed out a week or two ago in the *Electrical Times*. * * * It is slower to heat up than the Quartzalite convectors, owing probably to the thickness and large surface of the quartz plate in front, and little or no warmth is available for 5 or 6 minutes after switching on. In this respect it resembles a convector rather than a luminous heater—a piece of bread can be toasted to perfection, both sides, in less than a minute and a half, by holding it close in front of the glowing disc.”

And in Defendant's Exhibit 2 (page 37 of the *Electrical Times* of January 11, 1912), it is said:

“The red-hot quartz plate can be used for boiling water in a flat-bottomed kettle by swivelling the heater into a horizontal position, for toasting bread or for many purposes for which a circular hot plate is suitable, the vessel to be heated being set down in direct contact with the heating surface.”

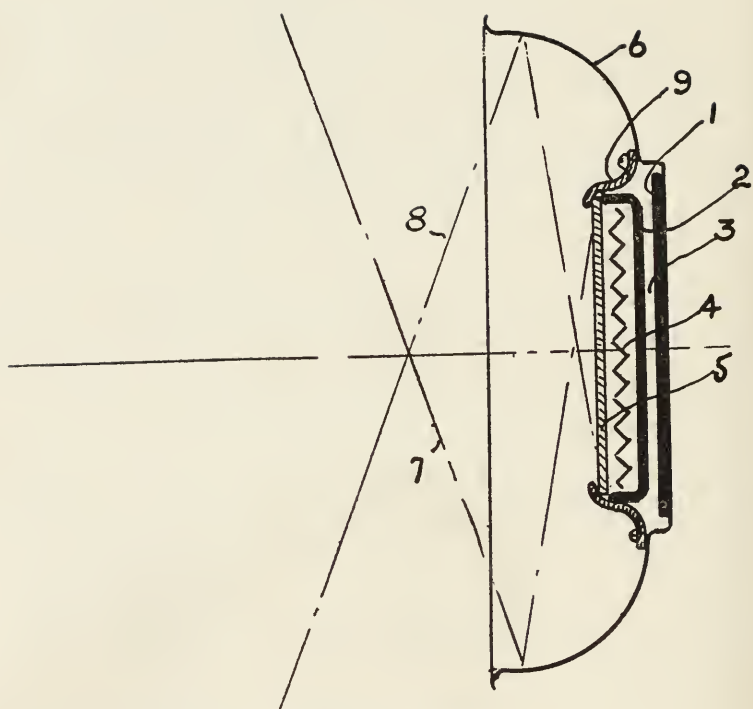
It is to be noted in this connection, however, that the device is a dangerous one, for in defendant's Exhibit 2 it is said:

“This, however, may constitute a danger, since there is nothing to prevent accidental contact with the red-hot quartz. * * * Two cases have already been brought to our attention which point clearly to the need for protection. In the first a child lighted a screwed-up newspaper by holding it against the incandescent surface, and in the second a piece of dress material fell on to it and

flared up. Fortunately neither instance resulted in any serious damage, though the child was much frightened and slightly burned on the hand."

The cut on the adjoining page, which is a cross section, may be taken as a visualization of the verbal description. It is our interpretation of the mechanical structure as near as we can spell it out from the description. In this diagram 1 represents the inner asbestos board; 2 the outer asbestos board; 3 the air space between the two asbestos boards; 4 the spiral heater element; 5 the circular quartz disc which becomes red hot; 6 the annular copper bowl; 7 and 8 two heat rays crossing each other. We have illustrated only two such rays, but it is apparent that there will be other similar rays. The majority of the heat rays, however, will emanate directly from the quartz disc without striking the sides of the bowl at all, and they are all convected heat. Hence the statement of Exhibit 1, that "the greater part of the energy is given out as convected heat."

It will be seen therefore that the heating unit is "totally enclosed" in a case or receptacle formed by asbestos boards in the bottom of the bowl, and a quartz disc in front, which is said to be six inches in diameter. This quartz disc is clamped in a metal ring. Outside of and beyond this ring is an annular copper reflector. Consequently, we have a copper bowl with a flat bottom. The diverging and criss-



FERRANTI FIRE

crossing rays are shown in the cut. The "beam" is not there.

The fundamental idea is to convey heat from the red-hot disc by convection, not radiation, and primarily the device is a cooking utensil, or an electric stove. When it is used for heating a room it heats primarily by convection, being similar in that respect to an open fire or steam radiator. In that respect the exhibit says specifically "that the greater part of the energy is given out as convected heat." It may be that a small quantity of radiant energy will strike the annular portion of the copper bowl and be reflected therefrom into the room as shown in the diagram by the rays 7 and 8; but if so, the amount will be insignificant, and even then will not assume the form of a beam composed of parallel rays. They will be divergent and criss-crossed as shown in our cut. The primary object of the device is to heat by convection, whether it be used for heating a room, toasting bread, grilling beefsteaks, or boiling water.

It may also be noted that the Ferranti Fires do not appear to have ever gone into use in the United States. Nor is there any evidence of their use in England; but even if there was, it would be immaterial because use in a foreign country does not affect a United States patent.

We submit that these publications of the Ferranti Fires are not sufficient to disclose the radiant beam principle or operate as anticipations, or limitations on

Brown's patent. The rule on this subject is thus stated by the Supreme Court in *Seymour vs. Osborne*, 11 Wall. 555:

"Patented inventions cannot be superseded by the mere introduction of a foreign publication of the kind, though of prior date, unless the description and drawings contain and exhibit a substantial representation of the patented improvement, in such full, clear, and exact terms as to enable any person skilled in the art or science to which it appertains, to make, construct, and practice the invention to the same practical extent as they would be enabled to do if the information was derived from a prior patent. Mere vague and general representations will not support such a defense, as the knowledge supposed to be derived from the publication must be sufficient to enable those skilled in the art or science to understand the nature and operation of the invention, and to carry it into practical use. Whatever may be the particular circumstances under which the publication takes place, the account published, to be of any effect to support such a defense, must be an account of a complete and operative invention capable of being put into practical operation."

The same rule is announced in Walker on Patents at Section 57, where several decisions of the Supreme Court are quoted. We may add thereto the subsequent case of *Williamson vs. Electric Co.*, 236 Fed. 353, where the rule is thus stated at page 354:

"The invention described in the publication must be identical in all respects with that whose novelty it contradicts. The same idea of means

in the same stage of development as that which the inventor of the later has embodied must be thereby communicated to the public."

Within the purview of this rule the publications of the Ferranti Fires are insufficient.

This disposes of the prior art as shown by the record. As we have already remarked, the opinion of the lower court refers to an English patent to Kempton, No. 12,320, and an English patent to Taylor, 102,070. But those patents were not put in evidence in this case and form no part of the record; hence we are not called on to consider them.

Our conclusion is that no heater of the prior art shows the radiant beam principle. The utmost that can be said is that some of the inventors of the prior art conceived of the desirability of utilizing that principle, but did not disclose a device for practicing it successfully. In a word, efforts had been made to attain the desired result, but none was successful, and to Brown is due the credit of solving the problem and producing the first concrete physical structure which successfully embodies and carries out said principle. That being true, he is the inventor of a primary improvement and is entitled to a liberal construction of his claim.

It remains now to inquire if the patent has been infringed.

DEFENDANT'S MACHINE

This device is represented by Plaintiff's Exhibit 5. It was placed on the market by defendant in 1919, practically three years after the plaintiff began its exploitation of the Brown invention.

The defendant's device is a portable electric heater provided with a substantial circular base plate, in the center of which is mounted an upright standard. This standard is forked at its apex, thereby producing a trunnion joint for the adjustment of the reflector, so that the same may have a swiveling motion for changing the angle of inclination of the reflector. Brown's patent shows only a stationary standard not provided with any device for changing the angle of inclination, though he has a subsequent patent covering that feature. This swiveling motion of the defendant's heater cuts no figure in this case, and is merely a variation of detail in respect to a part of the Brown structure not covered by the claim.

The reflector of the defendant's machine is made of highly polished copper, and is concavo-convex in form. It has not the specific flat flange 3a of the Brown patent around its edge, but instead thereof it has a turned over or round flange, and this substitution of a round flange for a flat flange is the principal point relied on by defendant to show non-infringement.

The heater element of the device is arranged longi-

tudinally of the axis passing through the focus of the curve. This also is relied on as another differentiating feature, but it is of no moment because the Brown patent does not call for any specific arrangement of the heating unit except that it is "supported at substantially the focus of said reflector."

The defendant's heater is also provided with a protective cage consisting of guard wires arched between opposite sides of the reflector. This device we claim to be an infringement of claim 1 of the Brown patent.

QUESTION OF INFRINGEMENT

The conclusion of infringement follows whether this claim be given a broad or a narrow construction. The lower court held that there could be no infringement unless the claim was given a broad construction. This was error. But even on the theory of a narrow construction, the holding of non-infringement was erroneous. In other words, there is infringement whether the claim be broad or narrow.

FIRST THEN AS TO A BROAD CONSTRUCTION. The plaintiff's device was beyond all question the first in the art to show in concrete form a device for successfully applying to a useful purpose the broad principle of the radiant energy beam. As we have already shown in our review of the prior art, the utmost that could be said in favor of that art is that certain inventors may have conceived of the desirability of

utilizing the radiant energy beam, but failed utterly to embody that principle in such practical form as to make it useful for the purpose in view. In all of those devices the heat rays emanating from the reflectors are scattering rays, which disperse themselves at various angles throughout the area of the room in which the heater is located. Not one of them is successful in producing a radiant energy beam. Necessarily they emitted some rays in straight lines, which if separated from the other rays might be called a beam; but in connection with those particular rays they also emitted other rays at divergent angles and criss-crossing one another. In fine, they produced a heterogeneous indiscriminate mass of rays, whereas Brown molded that irregular mass into a homogeneous cylindrical shaft or beam of parallel rays. No prior heater did this. Consequently, Brown produced an improvement over pre-existing devices of such a substantial character as to entitle him to a liberal interpretation of his claim. While it may be conceded that he was not the first in conception of the radiant beam principle, he was the first to embody that principle in concrete and useful form. This places his patent in the category of a primary improvement.

The case at bar is ruled by two decisions of this court where the doctrine of primary improvements was considered. The first is that of *Letson vs. Alaska Packers' Association*, 130 Fed. 140. There

the device was a machine for heading filled cans, and it appeared that a prior machine to one Jordan was capable of heading filled cans, but in an ⁱⁿefficient and impracticable manner. This Court said at page 140:

"So that while it cannot be said that the Jensen machine was a pioneer patent, in the sense that it was the very first to accomplish the result of heading filled cans, Jensen nevertheless was the first to successfully head filled cans with any practicable degree of speed or efficacy. He brought to success what prior inventors had essayed and but very imperfectly accomplished. In so doing he adopted some devices that had been used before, combined them with others that had not been used, and added the necessary elements to make a practical and successful machine. His combination and invention was, we think, more than a mere improvement or perfection of what had preceded it. It was of such novelty and importance as to constitute a distinct step in the progress of the art, and it went into immediate and extensive use. His claims are therefore entitled to a fairly liberal construction."

The second decision of this Court is *American Can Co. vs. Hickmott Asparagus Canning Co.*, 142 Fed. 144-5. Beginning at the bottom of page 144 this Court said:

"But we think it cannot be said that Jordan was a pioneer inventor in the sense that he was the first to produce a machine to successfully form can bodies. He was the first, however, to form can bodies by the use of a rotating horn. In so doing, he made a highly meritorious improvement and

an invention which marks a distinct step in advance in the progress of the art, and which has gone into extensive and successful use. His invention must be accorded a place inferior, perhaps, to that of a primary invention, but far in advance of those which constitute but a slight improvement on the prior art. His claims, therefore, while not entitled to the broadest construction accorded to the former, are not to be restricted to the narrow construction applicable to the latter. He is entitled to the protection of the doctrine of equivalents in proportion to the nature of the advance which his invention indicates."

Still another, and more recent, ruling of this court on the same point is the case of *Simplex Window Co. vs. Hauser*, 248 Fed. 924.

Another instance of a primary improvement is found in the case of *Consolidated Valve Co. vs. Crosby Valve Co.*, 113 U. S. 159, 179, by the Supreme Court, where the court says:

"Richardson's invention brought to success what prior inventors had essayed and partly accomplished. He used some things which had been used before, but he added just that which was necessary to make the whole a practically valuable and economical apparatus."

Still another instance is found in the case of *Wagner Typewriter Co. vs. Wyckoff, Seamans & Benedict*, 151 Fed. 590, where the court says (bottom of page 590):

"He converted a theory into a fact. His inven-

tion belongs to that large class which have ever been treated with liberality by the courts, where the inventor by an apparently simple change, addition, or transposition of parts, has converted imperfection into completeness."

These cases apply aptly to Brown's invention. He converted theory into fact: imperfection into completeness. Yet we were thrown out of court with the statement that he merely made "minor improvements in a known mechanism." Thus a valuable invention was slaughtered on the altar of technical construction.

It must also be kept in mind that none of these prior devices went into extensive use nor did they even survive. They were tentative efforts in a certain direction which resulted in failure. Hence they have been consigned to oblivion. They stand in the category of abandoned efforts. On the other hand, Brown's invention immediately went into universal use. It superseded everything which had preceded it in that line, and to-day is known and used throughout the whole civilized world. All this was done in the short space of about three years.

In view of the foregoing it is idle to argue that Brown did not make a meritorious contribution to the world. It is idle to assert that he invented "only minor improvements in a known mechanism." His invention was substantially a basic one in that it is the first embodiment in concrete and successful form

of a well known scientific principle. We submit, therefore, that his claim must be given a construction commensurate with the breadth of the invention, and giving it such construction, infringement necessarily follows. The lower court conceded that if the claim were entitled to a liberal construction infringement would follow.

AS TO THE NARROW CONSTRUCTION. We assert that even if the claim is not given the broad construction contended for, but is limited to a narrow construction, nevertheless infringement will follow. To show this we have merely to compare the defendant's structure with the elements of the claim. Those elements are only four in number. The first is a concavo-convex reflector. It is not denied that the defendant's machine contains such a reflector.

The second element is specified as "a heating unit supported at substantially the focus of said reflector." It cannot be denied that the defendant's machine has this element. The only respect in which it differs from the element shown in the drawings of the Brown patent is that in the Brown drawings the element is shown as being arranged transversely to the axis, whereas in defendant's machine it is arranged longitudinally of the axis. But the "arrangement" of the element is no part of the claim. The specification (at page 1, line 30 et seq.) says that this heating unit is "supported in any suitable manner in spaced rela-

tion with the reflector 1 and preferably at the focus of its curved surface." This is certainly broad enough to include a longitudinal arrangement. It is quite true that in the drawings of the patent the element is shown to be supported in a transverse direction; but that is only an illustration of what Brown considered to be the best arrangement. It is in no way a limitation. He says in his specification, beginning at line 33, page 1, where he describes the specific arrangement shown in the drawings:

"I prefer to support the heating unit by securing the terminals of the resistance coil 6, together with reinforcing wires 8, wound around the ends of the bobbin if desired, to the standards 9, the ends of the wires being held by clamping screws 10."

This is an answer to the contention that the element must be limited to the transverse position. Language could not be plainer. The law requires that a patentee shall show only one form in which the invention may be embodied, which form must be the one which the inventor considers the best. He is not required to show a plurality of forms. When he has shown one form, that is sufficient. If the invention can be embodied in other forms, the patent extends thereto. This rule of law, accompanied as it is by the direct statement in the specification, that the arrangement of the elements shown is only the preferred one, entitles the court, and indeed compels the court, to

hold that the longitudinal arrangement of the element is as much within the purview of the invention as the transverse arrangement.

In this connection it is to be noted from the claim that the only limitation on the arrangement of the heating unit is that it must be supported at "substantially the focus" of said reflector. That the defendant's heating unit is so supported cannot possibly be denied. That is a plain and palpable fact. Of course a focus mathematically considered is only a point, and technically speaking nothing can be located on a point. That, however, is a refinement not applicable to the affairs of real life. The meaning of the claim is sufficiently plain. That is, that the element must be arranged as near to the focus as is practical. If Brown had arranged his element outside of the curve of his reflector, then it would not have been arranged at substantially the focus, nor would it have accomplished the object sought. His coil passes through the mathematical focus of the curve and is therefore arranged at substantially the focus. The same is true of the defendant's heating unit. It likewise passes through the mathematical focus, though in a longitudinal direction instead of in a transverse direction; but it is arranged at substantially the focus or as near to the focus as is practical. If the defendant could avoid infringement by merely turning his heater element at a different angle, then the patent law would be nothing more than a farce. The essential idea was

the element itself, not the angle at which it was tilted.

The third element of the claim is stated to be "an annular member extending outwardly from the margin of the said reflector." Note the broad language here used, an annular *member*. The word *flange* is not used, but the word *member*. The specific illustration of this annular member is designated in the patent by the letters 3a. Its function is stated as follows, beginning at line 62, page 1 of the specification:

"In order to prevent the outer exposed edge of the heater from being heated I provide the casing with a marginal annular flange 3a."

This flange is in substance and effect nothing more than a cooling member. The reflector itself becomes heated by absorption of a portion of the radiant energy, and if its edge were left exposed, that edge would become highly heated and is a result to be avoided. Therefore, Brown provided the flat flange for that purpose. This flange does not become heated, except to a small extent, because the heat rays do not impinge upon it. These rays emanate from the mouth of the reflector in straight lines as a beam, and the flange 3a is outside of their path of travel, hence it remains cool. (See Dep. Henry, Rec. 51.)

The defendant realized that a cooling member around the edge of the reflector was necessary, or at least desirable. It provided one by turning over the edge of the reflector in the form of a round flange.

All that was done was to convert Brown's flat flange into a round flange without producing any different result, but on the contrary obtaining practically the same result. Defendant's round flange is a cooling element, and that is all that it is. The question for this court to decide is whether the round flange is the equivalent of the flat flange, both being used for the same purpose and both accomplishing the same result. (See Deposition of Henry, Rec. pp. 62-3.) Henry tested the device and found that the round flange was cooler than the reflector surface, and accomplished "exactly the same purpose" as Brown's flat flange (Rec. 63). At page 59, when comparing the two heaters, he said:

"They both produced substantially the same result in substantially the same manner by substantially the same means."

His testimony as to infringement is comprised between pages 53 and 64.

Fortunately there is a case in this court which seems to decide the identical question here involved. We refer to the case of *Sherman, Clay & Co. vs. Searchlight Horn Co.*, 214 Fed. 86.

The invention was a phonograph horn made up of several strips of metal. The patent showed in its drawings flat flanges for joining the strips together, and they were identified in the claim as "outwardly directed flanges." The defendant used a flange of

curved shape. He had merely taken the flat flange of the patent and turned it over in the shape of a round flange and then contended that he had not used "an outwardly extending flange"—that is to say, a flat flange. This court held that the two were equivalents and that no one could avoid a patent for a flat flange by merely turning it into a round flange. This authority seems to be strictly in point. Note the language in the two cases. In the phonograph case it was "outwardly directed flanges." In Brown's claim the expression is "an annular member extending outwardly." In view of the authority cited, how is it possible to contend that the round flange of Westinghouse is not the equivalent of the flat flange of Brown?

The fourth element of the claim is "a protective cage having guard wires arched between opposite sides of said annular member." It is not denied that defendant's machine has this element. In this behalf defendant has servilely copied the plaintiff. It could have used other forms of a protective cage, such for instance as the flat wire cage shown in Defendant's Exhibit 15, or the flat wire gauze shown in Defendant's Exhibit F. But instead of using any of these devices, defendant has provided a cage in servile imitation of Brown's cage of *arched* wires over the mouth of the reflector.

If the plaintiff is entitled to invoke the doctrine of equivalents, then beyond all peradventure of a

doubt there is infringement of claim 1. The only theory on which infringement can be negatived would be that plaintiff is not entitled to the doctrine of equivalents in any form whatever. That seems to have been the theory on which the lower court decided the case, and brings up the question as to the extent of the doctrine of equivalents a patentee is entitled to in the case of a narrow invention.

It would be useless to dwell at length upon this point. It is elementary that every claim, whether broad or narrow, is entitled to the doctrine of equivalents. We need only refer to the *Paper Bag Case*, 210 U. S. 405.

In the case of *Lepper vs. Randall*, 113 Fed. 628 it was said:

"In no case is a patentee to be denied protection commensurate with the scope of his actual and distinctly described and claimed invention by wholly excluding him from the benefit of the doctrine of equivalents."

In *Lang vs. Twitchell*, 207 Fed., 369, it is said:

"Primary inventions are entitled to a looser application of the doctrine of equivalents than secondary inventions; but even a secondary invention is entitled to invoke the doctrine of equivalents, although to a more limited extent. The doctrine of equivalents applies to all classes of inventions."

Walker on Patents, at Section 359 of his work (Fifth Edition) states the rule as follows:

"But a patentee is not to be denied the benefit of the doctrine of equivalents to the extent necessary to protect his actual invention, although the invention may be a narrow one."

This rule was entirely ignored by the learned judge of the lower court in this case. He held that the invention was a secondary one covering "only minor improvements in a known mechanism," and therefore the claim for said invention was not entitled to the doctrine of equivalents at all. Indeed he seems to concede mechanical equivalency, for he says at page 22 of the record:

"It is possible, of course, to characterize the turned-over edge of the defendant's reflector as a flange, and to find that in a slight degree it performs the function for which the annular member or flange illustrated in the Brown patent was designed, but such an effect is merely incidental."

As we construe this language it means in substance that equivalency exists, but that plaintiff is not entitled to invoke the doctrine because its invention is a narrow one. We submit that this is error.

WIDESPREAD USE

Under the decision of this Court in *Morton vs. Llewellyn*, 164 Fed. 693, following the rule of law established by the Supreme Court in *Krementz vs. Cottle*, 148 U. S. 556, serious consideration should be

given to this matter, but the lower court gave it no consideration whatever.

In that behalf it is to be noted in the first place that none of the prior devices has survived and they all have been superseded by the Brown invention. Among the prior art devices were those manufactured by the plaintiff prior to 1916, hereinbefore referred to as the early Majestic devices. They likewise proved to be unsuccessful, and were all abandoned. They did not solve the problem which the public demanded. There had been a long felt want for this device, as will be seen by reference to the numerous efforts of prior experimenters. That want was never supplied by any of those prior inventors, but *was* supplied by Brown's invention. Immediately upon the advent of that invention in the fall of 1916, it went into extensive use. During the last two months of 1916 plaintiff sold in the neighborhood of 8000. During the following years of 1917, 1918, 1919 and up to August 1920, approximately 400,000 were sold, and these sales extended all over the world, including China, Japan, New Zealand, Australia, Spain, France, Great Britain, Denmark, and South American countries (Rec. 40). It may be safely said that at the present time there is no part of the civilized world which these heaters have not occupied. The plaintiff started as an infant industry; it is now one of the large manufacturing concerns of the country.

As soon as this invention was put on the market

infringements sprang up. The first was the Hotpoint Electric Heating Company, of Ontario, California; suits were brought against them and their agents and judgments obtained. Then Eastern infringers appeared upon the scene, the principal one of which is the Westinghouse Electric & Manufacturing Company. This company is one of the largest electrical companies in the world. It had endeavored to market a portable heater under its Geiger patent, but as soon as the Brown invention became well known, it abandoned the Geiger device and began to manufacture the heater involved in this suit. It is one of the greatest tributes of praise which can be given to the merit of Brown's invention that the Westinghouse Company should have adopted it.

The other great electric company, the Edison Electric Appliance Co., had likewise adopted it, but took out a license and is now operating under the license.

In addition to these other manufacturers have put infringing devices upon the market, among them may be mentioned, Simplex Heating Co., Landers, Frary & Clark, The Rutenber Electric & Mfg. Co., and the Estate Stove Company (Rec. 118).

In fine, we have this condition of affairs, viz: prior to the Brown invention there had been a long felt want for the device in question; many different inventors throughout the country had endeavored to supply that want but had failed; many manufacturers had put out analogous heaters which failed; Brown

was the first to put out a successful heater involving this principle; his heater met with instantaneous success, and within three years extended all over the civilized world. The other manufacturers abandoned the particular styles which they had been attempting to market and adopted styles in imitation of Brown and involving the Brown invention.

In these circumstances the invention must be considered as one of great merit, and the claim therefor must receive a fair interpretation under the doctrine of equivalents. This was denied us by the lower court.

REVIEW OF THE LOWER COURT'S DECISION

The opinion commences at page 19 of the record and then proceeds to say, at page 22, that unless the Brown invention is generic and introduced a broad fundamental idea theretofore unknown in the art, there could be no infringement. It then proceeds to hold that the invention is not of that character. This conclusion is deduced from a review of the prior art. In that behalf it is asserted that the beam type heaters were shown and illustrated in the Shoenberg patent of September 1, 1914 (Defendant's Exhibit I); English patent to Kempton 12320; Morse patent of March 3, 1908 (Defendant's Exhibit F); English patent to Simplex of September 4, 1914; Warner patent of December 8, 1914 (Defendant's Exhibit H); Geiger patent of August 8, 1916 (Defendant's

Exhibit G); English patent to Taylor of November 16, 1916; and the prior publications of 1912 showing the "Ferranti Fires."

In regard to two of these prior patents, to wit, Kempton English patent 12320, and Taylor English patent 102070 of November 16, 1916, we have merely to remark that neither one of these patents was put in evidence in this case, nor does either of them appear in this record on appeal. Yet the learned Judge gave special force and effect to those two patents, and there can be no question that they, at least in part, influenced his decision. Beyond all question this is reversible error. This court is hearing this appeal upon the record which is before it and not upon some outside matter which the trial judge considered, but which was not put in evidence.

As an explanation of this glaring error, we say, off the record, that these two English patents were put in evidence on the trial of another and different case, which had been brought against another and different person, to wit, Holbrook, Merrill & Stetson, being case No. 499 in the lower court. The three Westinghouse cases involved on the present appeal were first tried, and then thereafter and following those trials the Holbrook, Merrill & Stetson case was tried, in which case the defendant therein was represented by different attorneys from those appearing for defendant in the Westinghouse cases. Now in this subsequent trial of the Holbrook, Merrill & Stetson case,

these two English patents of Kempton and Taylor were put in evidence; but we again assert that they were not put in evidence in any of the Westinghouse cases nor was it stipulated that they should be considered. Therefore, the trial Judge had no right to consider these two English patents in rendering his decision in the Westinghouse cases. They were no part of the evidence in those cases. Every case must be decided upon its own record, and upon that alone, and it can not be pieced out by reference to evidence in other cases of which the trial judge may perchance happen to be aware. It would have been no greater error if the trial judge in this case had selected some other prior foreign patent, either French, German, Italian, Spanish, Russian, Chinese or Japanese, which had not been put in evidence in the case, and had based his decision thereon. It cannot be denied that the opinion in this case was, partially at least, influenced by the Kempton and Taylor English patents. It so appears on the face of the opinion. How potent that influence was we have no way of knowing. All we know is that they had *some* influence, whereas they were not entitled to *any* influence whatever, because they were not in evidence. For this error alone the decree should be reversed.

Now turning our attention to the other prior patents referred to in the opinion of the lower court, we vigorously contend that they do not show or illustrate beam heaters. It may be admitted that they show

efforts at the production of beam heaters, but at the same time we assert that they are wholly ineffectual and ineffective to produce the desired result of a beam heater. The rays emanating from them are scattered indiscriminately from the mouth of the reflectors at divergent angles, and are not concentrated or solidified into the form of a beam of parallel rays. We have already gone over that matter in detail in respect of each one of the devices mentioned, and it would subserve no purpose of utility to dwell on the matter any further.

But even if it were true that these prior devices are beam heaters, it is virtually conceded by the opinion that the patent in suit shows a more perfect form of beam heater. In that behalf it is said at page 25-6 of the record:

"It is true that the types of reflector illustrated in the Shoenberg patent and employed by the plaintiff prior to the patent in suit created a less perfect beam, but the difference is in degree only."

This sentence embodies a fundamental error. The Shoenberg patent, and we use that merely as a type of the prior art, did not involve the *principle* of a beam heater though in a less perfect form, and the beam produced by Brown was not merely a difference in degree. In the Shoenberg heater the rays were scattered in all directions and at different angles. In the Brown device all the rays are concentrated

into a single large beam and discharged in only one direction, thereby producing a new result. To say that this is a mere difference in degree is to ignore scientific principles as well as to violate a fundamental rule of patent law.

But still further; the opinion of the trial court concedes the validity of the patent in suit, but holds that the invention is of such narrow scope as not to be entitled to the doctrine of equivalents at all, while virtually admitting actual equivalency. We have already referred to that portion of the opinion where it is said (page 22) that the turned over edge of the defendant's reflector may be called a flange and that in a slight degree it would perform the function of the Brown flat flange, but that such an effect is merely incidental, and that its primary purpose is to afford strength and a finished appearance. There are two errors in this. The first error consists in denying to plaintiff *in toto* the doctrine of equivalents. We have already shown that every invention is entitled to the doctrine of equivalents however narrow in scope it may be. The second error resides in the argument that while equivalency exists, it is incidental to the primary purpose of strength and a finished appearance. We understand the opinion to mean that the primary object of the Westinghouse flange was strength and finished appearance, not for cooling purposes, and that the infringement was *incidental*. If this means anything, it is that where a

defendant has no intention of infringing, but infringes unintentionally and incidentally by virtue of the construction he uses, then he has no responsibility. It makes intention the controlling factor, and ignores the actual fact. Of course there is no such law as this. If a person infringes, it makes no difference whether it was intentional or unintentional. It is the fact of infringement itself, not the motive, which the law condemns, and we marvel greatly that so learned and experienced a judge as the one who tried this case should have allowed himself to fall into such palpable error. That it was an error cannot be denied, and we ask this court to correct it by reversing the decree.

WAS THERE A MISTRIAL?

In conclusion there is a matter which we desire to call to the court's attention and which we submit without argument. It is this. The case was tried before Hon. Frank S. Dietrich, District Judge of Idaho, sitting in the place and stead of the resident judge of the Northern District of California, in pursuance of an order of the Senior Circuit Judge of the Ninth Circuit. That order appears at page 16 of the Record, and it authorizes Judge Dietrich

"to hold the District Court of the United States for the Northern District of California *during the months of August and September, 1920*, and to have and exercise *within* said District the same powers that are vested in the Judges thereof."

We have taken the liberty of underscoring the most essential parts of said order. In pursuance thereof, Judge Dietrich tried the case during the month of September, 1920, and took it under advisement. He then returned to Idaho, where he wrote an opinion which was transmitted to the court at San Francisco and filed by the clerk on *October 4, 1920*. On the same day Judge Maurice T. Dooling was presiding in the District Court for the Northern District of California, and in pursuance of the written opinion which had been sent by Judge Dietrich, ordered that a decree be entered dismissing the bill. Afterwards on *November 1, 1920*, when the Hon. R. S. Bean, District Judge of Oregon, was sitting in the District Court for the Northern District of California, a decree signed by Judge Bean dismissing the bill was entered in accordance with the order entered by Judge Dooling on *October 4, 1920*.

The question at once arises, is such a decree valid?

Judge Dietrich was appointed to hold court in the Northern District of California under provision of Section 14 of the Judicial Code, which provides that a Circuit Judge may in certain cases designate and appoint a judge of another district in the same circuit to have and exercise within the district first named the same powers that are vested in the judge thereof. It is to be observed, however, that the designated judge is to have and exercise judicial powers only "within the district" for which he is appointed. And

it is to be further observed that according to the order of appointment Judge Dietrich was authorized to exercise those judicial powers only "during the months of August and September, 1920." The facts are that the term of Judge Dietrich's appointment expired before his opinion was filed, and said opinion was rendered by him while he was not within said district.

Three questions arise:

(1) *Had he the power to act in the case at all while he was in Idaho and not within the Northern District of California?*

(2) *Had he the power to act in the matter after the expiration of the term for which he was designated to hold court in the Northern District of California.*

(3) *Can another judge, who did not try the case, sign the decree?*

If either of these questions be answered in the negative, then there was a mistrial, and the decree would have to be reversed irrespective of the merits, and a new trial ordered. We submit these questions to the court for answer. They should be determined definitely in the interest of proper practice. It has not been unusual for a judge, who has been designated to hold court in the Northern District of California for a specified time, to return to his home after the expiration of that time and decide cases which were submitted to him during the designated time. In fine, it has been customary to follow the course pur-

sued by Judge Dietrich in the present case, and were it a mere matter of convenience no question would be raised. But this is a question of power under a statute prescribing certain specific conditions under which a judge of one district may try and decide cases in another district. It must be conceded that Judge Dietrich would have had no authority to try this case in the Northern District of California in the absence of the designation required by the Judicial Code. If that is true, the question arises whether or not he has any authority under which a decree can be entered in the Northern District of California after the expiration of the time in which he was designated to act as judge. In other words, it is not a case of expediency or convenience, but one of power.

Dated, San Francisco,
February 21, 1921.

Respectfully submitted,

JOHN H. MILLER,
Attorney for Appellant.